

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/057281 A2

(51) International Patent Classification⁷: **G03F**
(21) International Application Number:
PCT/US2004/040158
(22) International Filing Date: 1 December 2004 (01.12.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/526,401 2 December 2003 (02.12.2003) US

(71) Applicant (for all designated States except US): **ADVANCED TECHNOLOGY MATERIALS, INC.** [US/US]; Margaret Chappuis, 7 Commerce Drive, Danbury, Connecticut 06810 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BERNHARD, David** [US/US]; 33 Butterfield Road, Newtown, Connecticut 06470 (US). **FUJITA, Yoichiro** [JP/JP]; 1-35-30, Fukasaku Minuma-ku, Saitama-shi, Saitama 337-0003 (JP). **MIYAZAWA, Tomoe** [JP/JP]; 1-12-5, Hikawadai, Higashikurume-shi, Tokyo 203-0004 (JP). **NAKAJIMA, Makoto** [JP/JP]; 6-18-17, Yatsu, Narashino-shi, Chiba 275-0026 (JP).

(74) Agent: **MARGARET CHAPPUIS**; Advanced Technology Materials, Inc., 7 Commerce Drive, Danbury, Connecticut 06810 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

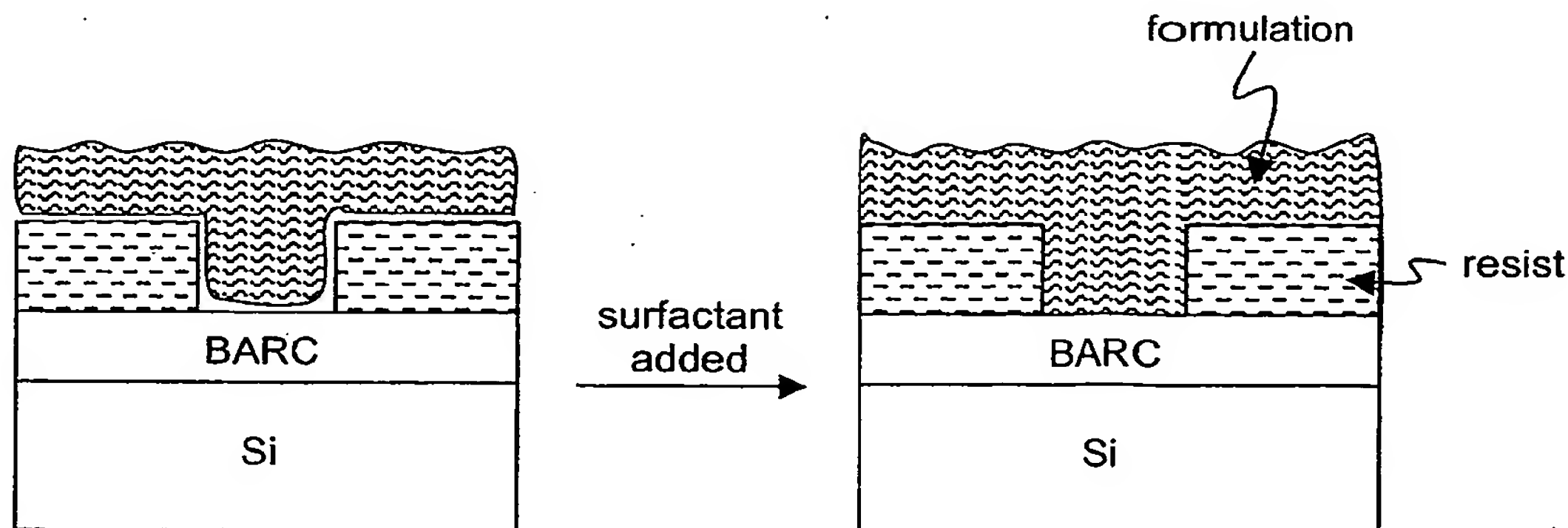
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RESIST, BARC AND GAP FILL MATERIAL STRIPPING CHEMICAL AND METHOD



(57) Abstract: An aqueous-based composition and process for removing photoresist, bottom anti-reflective coating (BARC) material, and/or gap fill material from a substrate having such material(s) thereon. The aqueous-based composition includes a fluoride source, at least one organic amine, at least one organic solvent, water, and optionally chelating agent and/or surfactant. The composition achieves high-efficiency removal of such material(s) in the manufacture of integrated circuitry without adverse effect on metal species on the substrate, such as copper, and without damage to SiOC-based dielectric materials employed in the semiconductor architecture.